740-051-9505-F

PRODUCE A LINE/HALFTONE NEGATIVE

TEC LESSON 740-051-9505-F

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ENGINEER CENTER AND FORT BELVOIR
FORT BELVOIR, VIRGINIA

STUDENT/SUPERVISOR INSTRUCTIONS, PRETEST/ POSTTEST, AND ANSWER KEY ARE CONTAINED IN THIS BOOK

JUNE 1986

D101.6/7:

If you have questions or comments concerning this TEC Lesson, address them to:

Commandant
U.S. Army Engineer School
ATTN: ATZA-TD-I-E*
Fort Belvoir, VA 22060-5291

* Current symbol may be obtained from DA Pam 350-100, Appendix C.

READ THE STUDENT/SUPERVISOR INSTRUCTIONS CAREFULLY. BE SURE YOU UNDERSTAND THEM COMPLETELY BEFORE BEGINNING THE LESSON.

PLEASE DO NOT WRITE IN THIS BOOK!!

The words "he," "his," and "men," when used in this publication, represent both the masculine and feminine genders, unless otherwise specifically stated.

READEX FICHE best copy available

STUDENT/SUPERVISOR INSTRUCTIONS

TYPE OF LESSON

- Photo and Layout Specialist

AUDIENCE

- MOS: 83E
- Skill Level: One and Two

TRAINING OBJECTIVES

Soldiers completing this lesson should be able to:

- Prepare the copy camera for a line negative
- Prepare the copy camera for a halftone negative
- Develop and inspect the negative

MATERIAL/EQUIPMENT/PERSONNEL REQUIRED

- Pencil or pen and paper
- Beseler Cue/See
- Filmstrip and cassette for "F" Lesson

TIME REQUIRED

- Individual: 60 minutes
- Group: 90 minutes

REFERENCES

- TM 5-245, Offset Photolithographer and Map Reproduction
- TM 5-6007, Camera Copying, Mobile Process, Rutherford Model Mac.
- The Navy Lithographer 3 and 2
- The Lithographer Manual Sixth Edition—Graphic Arts, Training Foundation Photo-offset Fundamentals
- STPS-83E12-SM-TG

STUDENT/SUPERVISOR INSTRUCTIONS

STUDENT INSTRUCTIONS

- Prerequisites: Before taking this lesson, you should have successfully completed AIT or One Station Unit Training.
- Take the Pretest. If you pass, you do not have to take the lesson.
- Make sure you have the material, equipment, and personnel required to complete the lesson.
- Take the lesson. Use a separate sheet of paper for notes. Do not write in this book.
- When you complete the lesson, take the Posttest. If you do not pass, take the lesson again.

SUPERVISOR INSTRUCTIONS

- Make sure students have completed the prerequisites listed in the Student Instruction.
- Administer the Pretest to determine need for the lesson. Responses to test questions must be made on a separate sheet of paper, not in the lesson book. To pass the test, a soldier must answer 10 of 13 test items correctly.
- Make sure students have the material, equipment, and personnel required to complete the lesson.
- Administer the lesson to students who do not pass the Pretest. Remind them to write any notes on a separate sheet of paper and not in the lesson book.
- Administer the Posttest to students who complete the lesson. Students who do not pass must take the lesson again.

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This test consists of 13 questions that cover the training objective of the lesson. These questions have a total value of 13 points. When you have completed the test, check your answers against the Pretest Answer Key. If you do not score at least 10 points, you must take the lesson. If you are taking the test directly from the instruction book, write your answers on a separate sheet of paper.

1. In preparing the lensboard assembly, you will begin by

   a. inspecting the lens for smudges, dust and fingerprints.
   b. determining lens requirements.
   c. mounting lens.
   d. removing lens cap.

2. Your first step to prepare the original for mounting on the copyboard is

   a. center the copy.
   b. mount the grayscale.
   c. activate the vacuum pump.
   d. locate the guide marks.

3. You have determined the copyboard setting. To make the copyboard setting, you will

   a. rotate the copyboard to a horizontal position.
   b. rotate the copyboard to a vertical position.
   c. rotate the copyboard away from the lensboard.
   d. activate the copyboard drive motor.

4. You are positioning the high-intensity light source on a copy camera. The correct angle for set-up is

   a. 45°
   b. 54°
   c. 56°
   d. 86°

5. You are ready to check the image on the focusing glass. Before positioning and securing the focusing glass, you will first

   a. activate high intensity light source.
   b. check image, focus and size.
   c. turn off all darkroom lights except safelight.
   d. activate the film back vacuum pump.

6. To set the exposure time on a 1:1 exposure your first step is to

   a. set the f/stop
   b. set the timer.
   c. set the basic exposure time.
   d. determine the new exposure time.

7. You are computing the new exposure time for an enlargement. To use the formula you must know the scale of reproduction and the

   a. excess density range.
   b. shadow density range.
   c. basic exposure time.
   d. screen range.

8. To determine the halftone exposure time you must

   a. determine the basic exposure time.
   b. determine the new exposure time.
   c. determine the copy density range.
   d. calibrate the flash test meter.

9. You are mounting the film and the magenta contact screen on the the film vacuum back. You will mount the film and the screen

   a. emulsion to emulsion.
   b. emulsion to base.
   c. base to base.
   d. magenta screen first.

10. Order the following steps, to expose the film.

    a. Set the time for flash exposure.
    b. Set timer for main exposure.
    c. Expose the film.

11. Order the following steps to process and develop the negative.

    a. Wash the film.
    b. Rinse the film.
    c. Place the film in developer.
    d. Fix the negative.

12. You are inspecting a line negative. To which opaque step on the gray scale will the negative be developed?

    a. 2
    b. 4
    c. 6
    d. 8

13. A good quality halftone negative will have a highlight and shadow dot size of

    a. 5% 70%
    b. 10% 90%
    c. 70% 5%
    d. 90% 10%

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This test consists of 13 questions that cover the training objective of the lesson. These questions have a total value of 13 points. When you have completed your test, check your answers against the Posttest Answer Key. If you do not score at least 10 points, you must take the lesson again. If you are taking the test directly from the instruction book, write your answers on a separate sheet of paper.

1. Your work order requires that a copy have a 60 percent reduction. You will use a

    a. 19-inch lens.
    b. 24-inch lens.
    c. 30-inch lens.
    d. 50-inch lens.

2. When you have located the guide marks on the copyboard, the next step is to

    a. mount the grayscale beside copy.
    b. center the copy.
    c. activate the vacuum pump.
    d. position and secure the focusing glass.

3. To determine the percentages and settings to position the lens and copyboard, you will use the

    a. halftone computer.
    b. lens and copyboard chart.
    c. grayscale.
    d. film/filter chart.

4. To position the high-intensity light, you will begin by setting the light at which of the following angles?

   a. 25°
   b. 35°
   c. 45°
   d. 55°

5. You are ready to check the image of the focusing glass. You have turned off all of the darkroom lights. Your next step is

   a. move the focusing glass to the standby position.
   b. position and secure the focusing glass.
   c. close the lens shutter.

6. You are performing a 1:1 exposure. You have adjusted the f/stop. You will now

   a. determine manufacturer's recommended basic exposure.
   b. turn the pump switch "ON".
   c. adjust the vertical control knob.
   d. adjust the horizontal control knob.

7. You are computing the new exposure time for a reduction. To use the formula you must know the scale of reduction and use

   a. screen range.
   b. excess density range.
   c. basic exposure time.
   d. shadow density.

8. You are calculating the halftone exposure time. You have determined the copy density range. The next step is to determine

   a. new exposure time.
   b. excess density.
   c. bump exposure time.
   d. basic exposure time.

9. You are producing a half-tone negative using a magenta contact screen. How should the contact screen be mounted?

   a. Base to base.
   b. Emulsion to emulsion.
   c. Base to emulsion.
   d. Magenta screen first.

10. You are ready to expose the film. You have determined that a "bump" is needed. This procedure will be done

    a. when setting the timer for the main exposure.
    b. after the main and flash exposures.
    c. after determining the density highlight.
    d. after determining the minimum ink density.

11. You have washed the negative. Your next step is to

    a. rinse the negative.
    b. fix the negative.
    c. inspect the negative.
    d. dry the negative.

12. Your inspection of a halftone/line negative will include checking for correct dimension, good resolution and

    a. sharp definition of detail.
    b. details filled in.
    c. fog in clear areas.
    d. scale within 10 percent.

13. Your inspection of the halftone negative will include checking for a

    a. 10% shadow dot size.
    b. 30% shadow dot size.
    c. 50% highlight dot size.
    d. 70% highlight dot size.

Each of the 13 questions has a value of one point. The total possible score is 13 points. A passing score is 10 points or more.

1. b
2. d
3. d
4. a
5. c
6. a
7. c
8. c
9. a
10. b, a, c
11. c, b, d, a
12. b
13. d

POSTTEST ANSWER KEY

Each of the 13 questions has a value of one point. The total possible score is 13 points. A passing score is 10 points or more.

1. b
2. b
3. b
4. c
5. b
6. a
7. c
8. b
9. c
10. b
11. c
12. a
13. a